UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,460	02/23/2004	Thomas W. Towles	2003B034	8235

7590 07/08/2004

ExxonMobil Chemical Company
Law Technology
P.O. Box 2149
Baytown, TX 77522-2149

EXAMINER	
CHEUNG, WILLIAM K	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 07/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/784,460	TOWLES, THOMAS W.	
	Examiner	Art Unit	
	William K Cheung	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *0223*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debras et al. (US 6,432,792 B1).

The invention of claims 1-10 relates to a ***process for producing a resin*** *suitable for use as utility conduit comprising* ***polymerizing ethylene or copolymerizing ethylene and an alpha-olefin comonomer comprising 3 to 10 carbon atoms****, in the presence of a* ***chromium and titanium-based catalyst*** *activated by:*

(a) ***contacting said catalyst*** *in a reactor at a temperature of between about* ***370-540°C (700-1000°F)*** *with an atmosphere consisting essentially of an* ***inert gas****; and then*

(b) ***introducing an oxidant*** *into said reactor so that the temperature of said reactor* ***does not exceed about 510°C (950°F);*** *and then*

(c) ***completing the activation of said catalyst*** *in a reactor at a temperature of about* ***605-695°C (1120-1280°F)*** *under an* ***oxidizing atmosphere.***

Debras et al. (col. 8-9) in example 2 disclose a polyethylene prepared using chromium and titanium-based catalyst. Further, in Table 2, Debras et al. disclose that the prepared polyethylene has a density of around 0.950 g/cc and having a MI_2 from catalyst D that meet the claimed MI_2 requirement. Debras et al. (col. 8, line 57-61; Table 2) also indicate that the activation of the catalyst was performed at 650 °C in air which is an oxidizing atmosphere. Debra et al. (col. 1, line 29) clearly indicate that the prepared polyethylene is suitable as a pipe resin (a conduit resin).

Although Debras et al. are silent on contacting said catalyst in a reactor at a temperature of between about 370-540°C and introducing an oxidant into said reactor so that the temperature of said reactor does not exceed about 510°C, however, it is well established in the art of chromium based catalyst polymerization processes that the temperature of the polymerization should be lower than the activation temperature of the chromium based catalyst. Motivated by the expectation of success of preventing

premature activation of the chromium catalyst, it would have been obvious to one of ordinary skill in art to operate the reactor at a temperature lower than the activation temperature of the catalyst prior to the introduction of an oxidant into the reactor to obtain the invention of claims 1-10.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 11-15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Debras et al. (US 6,432,792 B1).

The invention of claims 11-15 relates to ***a resin*** *suitable for use as utility conduit, further characterized as comprising the* ***residue of a chromium and titanium-based catalyst*** *activated by:*

(a) ***contacting said catalyst*** *in a reactor at a temperature of between about* ***370-540°C (700-1000°F)*** *with an atmosphere consisting essentially of an* ***inert gas****; and then*

(b) ***introducing an oxidant*** *into said reactor so that the temperature of said reactor* ***does not exceed about 510°C (950°F);*** *and then*

(c) ***completing the activation*** *of said catalyst in a reactor at a temperature of about* ***605-695°C (1120-1280°F)*** *under an* ***oxidizing atmosphere.***

Debras et al. (col. 8-9) in example 2 disclose a polyethylene prepared using chromium and titanium-based catalyst. Further, in Table 2, Debras et al. disclose that

the prepared polyethylene has a density of around 0.950 g/cc and having a MI_2 from catalyst D that meet the claimed MI_2 requirement. Debras et al. (col. 8, line 57-61; Table 2) also indicate that the activation of the catalyst was performed at 650 °C in air which is an oxidizing atmosphere. Debra et al. (col. 1, line 29) clearly indicate that the prepared polyethylene is suitable as a pipe resin (a conduit resin). In view of the substantially identical monomer composition and density properties, the examiner has a reasonable basis to believe that the claimed polyethylene is inherently possessed in Debras et al. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show otherwise. In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977); In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Although Debras et al. are silent on contacting said catalyst in a reactor at a temperature of between about 370-540°C and introducing an oxidant into said reactor so that the temperature of said reactor does not exceed about 510°C, however, applicants must recognize that "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William K. Cheung

Primary Examiner

July 3, 2004